

§ 56.15–5

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(d) Single welded butt joints without the use of backing strips may be employed in the fabrication of pipe joining fittings of welded construction provided radiographic examination indicates that complete penetration is obtained.

(e) Each pipe joining fitting must be marked in accordance with MSS SP-25 (incorporated by reference; see 46 CFR 56.01–2).

[CGFR 68–82, 33 FR 18843, Dec. 18, 1968, as amended by USCG–2003–16630, 73 FR 65176, Oct. 31, 2008]

§ 56.15–5 Fluid-conditioner fittings.

(a) Fluid conditioner fittings certified in accordance with subpart 50.25 of this subchapter are acceptable for use in piping systems.

(b) Fluid conditioner fittings, not containing hazardous materials as defined in § 150.115 of this chapter, which are made in accordance with the applicable standards listed in Table 56.60–1(b) of this part and of materials complying with subpart 56.60 of this part, may be used within the material, size, pressure, and temperature limitations of those standards and within any further limitations specified in this subchapter.

(c) The following requirements apply to nonstandard fluid conditioner fittings which do not contain hazardous materials as defined in § 150.115 of this chapter:

(1) The following nonstandard fluid conditioner fittings must meet the applicable requirements in § 54.01–5 (c)(3), (c)(4), and (d) of this chapter or the remaining provisions in part 54 of this chapter, except that Coast Guard shop inspection is not required:

(i) Nonstandard fluid conditioner fittings that have a net internal volume greater than 0.04 cubic meters (1.5 cubic feet) and that are rated for temperatures and pressures exceeding those specified as minimums for Class I piping systems.

(ii) Nonstandard fluid-conditioner fittings that have an internal diameter exceeding 15 centimeters (6 inches) and that are rated for temperatures and pressures exceeding those specified as minimums for Class I piping systems.

(2) All other nonstandard fluid conditioner fittings must meet the following:

(i) All pressure-containing materials must be accepted in accordance with § 56.60–1 of this part.

(ii) Nonstandard fluid conditioner fittings must be designed so that the maximum allowable working pressure does not exceed one-fourth of the burst pressure or produce a primary stress greater than one-fourth of the ultimate tensile strength of the material for Class II systems and for all Class I, I-L, and II-L systems receiving ship motion dynamic analysis and non-destructive examination. For Class I, I-L, or II-L systems not receiving ship motion dynamic analysis and non-destructive examination under § 56.07–10(c) of this part, the maximum allowable working pressure must not exceed one-fifth of the burst pressure or produce a primary stress greater than one-fifth of the ultimate tensile strength of the material. The maximum allowable working pressure may be determined by—

(A) Calculations comparable to those of ASME B31.1 (incorporated by reference; see 46 CFR 56.01–2) or Section VIII of the ASME Boiler and Pressure Vessel Code (incorporated by reference; see 46 CFR 56.01–2);

(B) Subjecting a representative model to a proof test or experimental stress analysis described in paragraph A–22 of Section I of the ASME Boiler and Pressure Vessel Code (incorporated by reference, see 46 CFR 56.01–2); or

(C) Other means specifically accepted by the Marine Safety Center.

(iii) Nonstandard fluid conditioner fittings must be tested in accordance with § 56.97–5 of this part.

(iv) If welded, nonstandard fluid conditioner fittings must be welded in accordance with subpart 56.70 of this part and part 57 of this chapter or by other processes specifically approved by the Marine Safety Center.

(d) All fluid conditioner fittings that contain hazardous materials as defined in § 150.115 of this chapter must meet the applicable requirements of part 54 of this chapter, except subpart 54.10.

(e) Heat exchangers having headers and tubes and brazed boiler steam air

heaters are not considered fluid conditioner fittings and must meet the requirements in part 54 of this chapter regardless of size. For brazed boiler steam air heaters, see also § 56.30-30(b)(1) of this part.

[CGD 77-140, 54 FR 40602, Oct. 2, 1989, as amended by CGD 83-043, 60 FR 24772, May 10, 1995; USCG-2003-16630, 73 FR 65176, Oct. 31, 2008]

§ 56.15-10 Special purpose fittings.

(a) Special purpose fittings certified in accordance with subpart 50.25 of this subchapter are acceptable for use in piping systems.

(b) Special purpose fittings made in accordance with the applicable standards listed in Table 56.60-1(b) of this part and of materials complying with subpart 56.60 of this part, may be used within the material, size, pressure, and temperature limitations of those standards and within any further limitations specified in this subchapter.

(c) Nonstandard special purpose fittings must meet the requirements of §§ 56.30-25, 56.30-40, 56.35-10, 56.35-15, or 56.35-35 of this part, as applicable.

Subpart 56.20—Valves

§ 56.20-1 General.

(a) Valves certified in accordance with subpart 50.25 of this subchapter are acceptable for use in piping systems.

(b) Non-welded valves complying with the standards listed in § 56.60-1 of this part may be used within the specified pressure and temperature ratings of those standards, provided the limitations of § 56.07-10(c) of this part are applied. Materials must comply with subpart 56.60 of this part. Welded valves complying with the standards and specifications listed in § 56.60-1 of this part may be used in Class II systems only unless they meet paragraph (c) of this section.

(c) All other valves must meet the following:

(1) All pressure-containing materials must be accepted in accordance with § 56.60-1 of this part.

(2) Valves must be designed so that the maximum allowable working pressure does not exceed one-fourth of the burst pressure or produce a primary

stress greater than one-fourth of the ultimate tensile strength of the material for Class II systems and for all Class I, I-L, and II-L systems receiving ship motion dynamic analysis and non-destructive examination. For Class I, I-L, or II-L systems not receiving ship motion dynamic analysis and non-destructive examination under § 56.07-10(c) of this part, the maximum allowable working pressure must not exceed one-fifth of the burst pressure or produce a primary stress greater than one-fifth of the ultimate tensile strength of the material. The maximum allowable working pressure may be determined by—

(i) Calculations comparable to those of ASME B31.1 (incorporated by reference; see 46 CFR 56.01-2) or Section VIII of the ASME Boiler and Pressure Vessel Code (incorporated by reference; see 46 CFR 56.01-2), if the valve shape permits this;

(ii) Subjecting a representative model to a proof test or experimental stress analysis described in paragraph A-22 of Section I the ASME Boiler and Pressure Vessel Code (incorporated by reference; see 46 CFR 56.01-2); or

(iii) Other means specifically accepted by the Marine Safety Center.

(3) Valves must be tested in accordance with § 56.97-5 of this part.

(4) If welded, valves must be welded in accordance with subpart 56.70 of this part and part 57 of this chapter or by other processes specifically approved by the Marine Safety Center.

(d) Where liquid trapped in any closed valve can be heated and an uncontrollable rise in pressure can result, means must be provided in the design, installation, and operation of the valve to ensure that the pressure in the valve does not exceed that allowed by this part for the attained temperature. (For example, if a flexible wedge gate valve with the stem installed horizontally is closed, liquid from testing, cleaning, or condensation can be trapped in the bonnet section of the closed valve.) Any resulting penetration of the pressure wall of the valve must meet the requirements of this part and those for